

REMARKS

The above amendments and following remarks are submitted in response to the initial official action of the Examiner mailed August 15, 2002. This amendment is deemed to fully respond to all objections and rejections of the Examiner. Thus, claims 1-20, being all pending claims, are now expected to be in condition for allowance. Reconsideration to that end is respectfully requested.

The Chief Draftsperson has objected to Fig. 10 as having numbers/characters less than the minimum height required by 37 C.F.R. 1.84(p)(3). Supplied herewith is a redrawn Fig. 10 in response to that objection. No new matter has been added.

At the time of filing, certain serial numbers and filing dates were not available for cross referenced co-pending applications. Page 1 of the specification has been amended above to provide for this deficiency.

Claims 1, 11-13, and 16-19 have been rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,212,657, issued to Wang et al. (hereinafter referred to "Wang"). In response thereto, claims 1, 11-12, and 16-19 are amended above to include various limitation relative to an important feature of Applicants' invention. As supported by Fig. 4 and discussed at

page 16 of the specification, Applicants' system streams a single spooled video program from memory to multiple requesters at no closer than a given time interval. In the preferred mode of practicing the present invention, this predetermined interval is one minute as specified on page 16. Thus, for the most popular of requested programs, no more than 120 streams are required for a standard two hour program length.

As a result in larger systems, multiple users are synchronized at one minute intervals, thus limiting total system loading. It is possible that a very large number of subscribers can view the program from a single video stream, with at most a one minute wait to engage the closest video stream. These efficiencies are not possible with Wang, which apparently treats each request individually.

Claims 11-13, as amended, show that multiple subscribers requesting the same program are synchronized if the difference between their request times is less than a predetermined amount. The maximum one minute of delay is anticipated to be acceptable to subscribers while providing substantial limitations on system loading for the most popular of programming materials.

Similarly, claims 16-19 have been amended to show that two subscribers requesting the same program within a predetermined interval will receive programming from a single video stream,

whereas is that predetermined interval is exceeded, each will receive its own video stream.

Claims 2 and 14-15 are rejected under 35 U.S.C. 1.3(a) as being unpatentable over Wang in view of U.S. Patent No. 5,860,093, issued to Englin et al. (hereinafter referred to as "Englin"). This ground of rejection is respectfully traversed as to amended claims 2 and 14-15 for the following reasons.

In addition to the patentability of the claims from which they depend, claims 2 and 14-15 are separately patentable in that the alleged combination of Wang and Englin lacks motivation. Wang specifically teaches moving video programming from high capacity storage devices 131 to memory buffers 114 before subsequent movement to memory 126 from which the video programming is streamed to the subscriber. Thus, Wang teaches away from utilizing the Unisys CMP having common memory having common memory for both spooling and streaming. Furthermore, the SCSI control protocol favored by Wang cannot obtain the advantages of the shared memory approach of the Unisys CMP architecture.

Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang, in view of Englin, and further in view of U. S. Patent No. 6,412,004, issued to Chen et al. (hereinafter referred to as "Chen"). In addition to the patentability of the claims from which claims 3-5 depend, claims 3-5 are separately

patentable because the alleged combination involving Chen is clearly not motivated. The Examiner states:

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Wang to include Windows NT-based streaming servers, as disclosed by Chen, to enable the streaming servers to be networked together to balance traffic load and to increase service availability. (Emphasis added)

This statement is implausible, because Wang considers his system to be networked already. Column 3, lines 41-44, states:

In another embodiment, the processing modules are conventional network interface cards for formatting the video stream and delivering the video stream to a client over a network such as an ethernet, ATM, or PSTN network and the like.

Thus, one looking to the teachings of Wang and wishing to have the advantages of networking, would employ "network interface cards", as taught by Wang, rather than looking to incorporate the teachings of Chen, as alleged by the Examiner.

The rejections of claims 6-10, as amended, are respectfully traversed for the reasons stated above. As amended, these claims are now limited to streaming a single stream to multiple subscribers requesting the same video program within a predetermined interval.

Having thus responded to each objection and ground of rejection, Applicants respectfully request entry of this amendment and allowance of claims 1-20, being the only pending claims.

Respectfully submitted,

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By their attorney,

Date

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APPENDIX A (Support for Specification Amendments)

Please amend the specification as follows:

1. At page 1, line 7, replace "_____, filed _____" with
-09/304,406, filed May 4, 1999-;
2. At page 1, line 8, replace "_____, filed _____" with
-09/304,908, filed May 4, 1999-;
3. At page 1, lines 9-10, replace "_____, filed _____"
with -09/304,907, filed May 4, 1999-; and
4. At page 1, line 11, replace "_____, filed _____" with
-09/400,647, filed September 21, 1999-.

APPENDIX B (Support for Claim Amendments)

CLAIMS

1. (First Amended) In a video on demand system for supplying requested video data to a plurality of subscriber [receiver] receivers, the improvement comprising:

5 a. a first processor which spools said requested video data;

b. a video server memory responsively coupled to said first processor in which said spooled requested video data is stored; and

c. a second processor responsively coupled to said video server memory and said subscriber receiver which streams said spooled requested video data from said video server memory to said plurality of subscriber [receiver] receivers in a plurality of streams spaced apart by a predetermined time.

2. (First Amended) The video on demand system of claim 1 wherein video server said memory further comprises a Unisys CMP memory platform.

3. (First Amended) The video on demand system of claim 2 wherein said second processor further comprises an industry compatible, Windows NT based processor.

4, (First Amended) The video on demand system of claim 3 wherein said first processor further [comprising] comprises a transaction server responsively coupled to said subscribing receiver and said video server memory.

5. (Unchanged) The video on demand system of claim 4 wherein said requested video data further comprises MPEG-2 format.

6. (First Amended) An apparatus comprising:

a. [A] two subscribing [cable] television [receiver capable] receivers each of which providing a separate spaced apart service request for a video program;

b. A memory having [a spooled] said video program in spooled form corresponding to said service request; and

c. A processor responsively coupled to said memory and said two subscribing cable television receivers which streams said spooled video program to said two subscribing [cable] television [receiver] receivers as a single stream if said separate spaced apart service request are spaced apart by less than a given time period.

7. (Unchanged) An apparatus according to claim 6 wherein said processor comprises an industry compatible, Windows NT based processor.

8. (Unchanged) An apparatus according to claim 7 wherein said memory comprises a Unisys CMP memory platform.

9. (Unchanged) An apparatus according to claim 8 wherein said spooled video program further comprises MPEG-2.

10. (Unchanged) An apparatus according to claim 9 further comprising a transaction server responsively coupled to said subscribing television receiver and said memory.

5 11. (First Amended) A video on demand system comprising:

a. First means for requesting a video on demand program at a first time;

b. Second means for requesting said video on demand program at a later second time;

c. Means responsively coupled to said first requesting means for storing said requested video on demand program; and

10 d. Means responsively coupled to said storing means for streaming said requested video on demand program once if a difference between said second time and said first time is less than a predetermined interval.

12. (First Amended) A video on demand system according to claim 11 wherein said first requesting means further comprises a subscriber box.

15 13. (Unchanged) A video on demand system according to claim 12 wherein said streaming means further comprises an industry standard personal computer.

14. (Unchanged) A video on demand system according to claim 13 wherein said storing means further comprises a Unisys CMP memory platform.

15. (First Amended) A video on demand system according to claim 14 further comprising a transaction subsystem responsively coupled to said first requesting means and said storing means for spooling said requested video on demand program into said storing means and for managing archival storage of video streams in a hierarchical storage management system that is integrated with the management application and requires no manual intervention.

16. (First Amended) A method of providing video on demand services comprising:

- a. Generating a video on demand request from a first subscriber at a first time;
- b. Generating a similar video on demand request from a second subscriber at a second later time;
- c. Storing a video program corresponding to said video on demand request; and
- d. Streaming said corresponding video program from said storage to said first subscriber and said second subscriber beginning at a third time if a difference between said second later time and said first time is less than a predetermined interval.

17. (First Amended) A method according to claim 16 further comprising:

- a. [Pausing said] streaming [in response to a pause signal from] said corresponding video program to said first subscriber at said third time and second streaming said corresponding video program to said second subscriber at a fourth time if said difference between said second later time and said first time is greater than a predetermined interval.

18. (First Amended) A method according to claim [16] 17 wherein said predetermined interval further [comprising:] one minute.

[a. Reversing said streaming in response to a reverse signal from said subscriber.]

19. (First Amended) A method according to claim [16] 18 further comprising:

a. Fast forwarding said streaming in response to a fast forward from said first subscriber.

20. (First Amended) A method according to claim [16] 19 wherein said processing step further
5 comprises:

a. Performing subscriber accounting to enable billing said subscriber for said video on
demand request.